Office of the Vermont State Treasurer

Pensions 101

Presentation to the Senate Committee on Government Operations

January 7, 2022





Defined Benefit (DB) Plans

- Vermont Municipal Employees' Retirement System (VMERS)
- Vermont State Employees' Retirement System (VSERS)
- Vermont State Teachers' Retirement System (VSTRS)
- Presentation will focus on VSERS and VSTRS DB (Boards funded by the State)

Defined Contribution (DC) Plans

Plan Name	Total Participants	Tota (as o	al Assets of June 30, 2021)	Fiduciary	
State Defined Contribution	551	\$	91,371,892	State Treasurer	
Municipal Defined Contribution	433	\$	32,239,780	VMERS Board	

Supplemental Retirement Plans

Plan Name and Eligible Participants	Total Participants	٦	Fotal Assets	Fiduciary
457(b) Deferred Comp Plan (State and Municipal)	12,251	\$	977,328,007	VSERS
403(b) Plan (Teachers and Municipal)	2,936	\$	161,484,040	VSTRS
Single Deposit Investment Account (State and Teachers, closed to new entrants)	865	\$	31,177,580	VSERS and VSTRS jointly
Municipal Retiree Health Savings Plan	3,697	\$	14,303,833	VMERS

Vermont Treasury (Retirement and Treasury Operations) staff provide investment line-up oversight and administrative support for all of these plans working with a contracted vendor (Prudential).

<u>VSERS</u>

- The Vermont State Retirement System (VSERS) is the public pension plan provided by the State of Vermont for State employees.
- It was created in 1944 and is governed by Vermont Statute Title 3, Chapter 16.
- The system has undergone several major changes over the years, including merger of the State Police and Motor Vehicle Inspectors' Retirement System, benefits and contribution reform in 1972, creation of a non-contributory retirement plan for rank-and-file state employees in 1981.
- In 1990 the Legislature mandated a return to a contributory system effective January 1, 1991 with full implementation by January 1, 1995.

Demographic Data from Valuation

	2021	2020
 Number of retired members and beneficiaries 	7,716	7,424
 Number of deferred members as reported by System 	771	768
 Number of inactive members as reported by System 	1,716	1,482
Number of active members	8,192	8,539
Total payroll	\$552,316,523	\$551,981,002
Average payroll	67,421	64,642
 Total monthly benefits for all retired members and beneficiaries 	13,456,088	12,581,175
Average monthly benefit for all retired members and beneficiaries	1,744	1,695

VSERS Groups

- Group A
 - Eligible from 1947 1984 and elected to stay in the contributory system
- Group C
 - Law Enforcement
- Group D
 - Judges
- Group F

Hired on or after January 1,1991

Hired before January 1, 1991 and were in Group E are now Group F members

- Group F*
 - Hired on or after July 1, 2008
- Over 90% of state workforce is in Group F

VSTRS

- The Vermont State Teachers' Retirement System (VSTRS) is the public pension plan provided by the State of Vermont for State teachers.
- It was created in 1947 and is governed by Vermont Statute Title 16, Chapter 55.

Demographic Data from Valuation

	2021	2020
 Number of retired members and beneficiaries 	10,106	9,843
 Number of deferred members as reported by the System 	911	887
 Number of inactive members as reported by the System 	2,915	2,710
Number of active members	9,955	9,996
Total payroll	\$657,934,953	\$645,902,984
Average payroll	66,091	64,616
 Total monthly benefits for all retired members and beneficiaries 	18,591,034	17,690,605
 Average monthly benefit for all retired members and beneficiaries 	1,840	1,797

VSTRS Groups

• Group A

-Eligible from 1947-1984

Elected to remain Group A

• Group C

-Hired on or after July 1, 1990

-Hired before July 1, 1990, were in Group B and moved to Group C

• Vast majority are in Group C

Vermont Model



*Note VPIC currently purchases some services (banking, wire services, financial reporting from Treasurer's Office. Over time VPIC may elect to assume these services, depending on staffing and cost efficiencies

Balancing Act of Pension Systems

Retirement Equation



Contributions + Investment Income = Benefits + Expenses or Contributions = Benefits + Expenses - Investment Return

- Crossover or Depletion: Plan assets and expected future contributions are no longer sufficient to pay expected future benefit payments.
- The critical tipping point is not when assets run out or even decline, but when Governors and Legislatures no longer believe the required contributions are realistic and give up trying to fund the actuarially required contributions.

- Treasurer's Office 2005 Teacher Funding Report

Actuarial Process



Note: Adapted from Segal Group various client valuation repots, and GRS, ERS of Texas Experience Study, 2020.

Some Actuarial Terms

- Actuarial Method: Entry Age Normal Cost Method
 - Allocates cost between past and future service
- Normal Cost:
 - Cost of the annual benefit accrual as a level percent of salary
 - Any payments directed to addressing the unfunded actuarial accrued liabilities not part of the normal cost
 - Employee and employer costs
 - The employer normal cost equals the total normal cost of the plan reduced by employee contributions
- Unfunded Actuarial Accrued Liability (UAAL): Actuarial Accrued liability minus actuarial value of assets
 - Number can be negative-called a funding surplus
 - VSERS had a funding surplus of approximately \$11 million in 2007, prior to the Great Recession

Funding Process

(source: The Segal Group)



Present Value of Future Plan Benefits (PVFB)= amounts expected to be paid at various future times under a particular set of actuarial assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits.

- Includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a
 refund or a future retirement benefit.
- It is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
- A discount rate is applied to future benefit payments in order to calculate the present value or value in today's dollars.

How are we doing?

- Measured by an Independent Actuary through an annual valuation.
- Three Important Factors:
 - Pension Status
 - Pension Liabilities
 - Assets Available to meet these liabilities
 - Unfunded Liabilities
 - Is Employer contributing to plan at the recommended rate?
 - Actuarially Determined Employer Contribution (ADC/ADEC)
 - Is plan in place to retire the unfunded liability?
 - Is it doable?



Pension Status <u>Purpose of the Annual Valuation</u>

- To set or assess the adequacy of the retirement system to pay current and future retirement benefits.
- To assure intergenerational equity in the allocation of costs.
- Outputs:
 - Calculate the actuarially accrued liabilities
 - Calculate the actuarial value of assets
 - Calculate the funding status
 - Determine the Actuarially Determined Employer Contribution (ADEC)
 - Identify Gains and Losses: Review annual experience and compare against current actuarial assumptions
 - Review within the context of the statutorily established funding policy (amortization period)
 - Assess risks to the pension system
- Closed System
 - Estimate of a plan's financial position as of the valuation date
 - Snapshot

FUNDING VALUATIONS

VSERS	2019	2020	2021
Actuarial Accrued Liability	\$ 2,779,965,523	\$ 3,095,290,972	\$ 3,280,867,677
Actuarial Value of Assets	\$ 1,964,500,825	\$ 2,054,825,853	\$ 2,216,499,478
Unfunded Liability	\$ 815,464,698	\$ 1,040,465,119	\$ 1,064,368,199
Funding Percentage	70.67%	66.39%	67.56%
VSTRS	2019	2020	2021
Actuarial Accrued Liability	\$ 3,505,319,267	\$ 3,969,002,977	\$ 4,142,014,660
Actuarial Value of Assets	\$ 1,950,859,980	\$ 2,035,713,611	\$ 2,191,650,755
Unfunded Liability	\$ 1,554,459,287	\$ 1,933,289,366	\$ 1,950,363,905
Funding Percentage	55.65%	51.29%	52.91%
VMERS	2019	2020	2021
Actuarial Accrued Liability	\$ 896,341,848	\$ 1,004,560,034	\$ 1,074, 167,813
Actuarial Value of Assets	\$ 718,337,020	\$ 761,505,976	\$ 837,095,639
Unfunded Liability	\$ 178,004,828	\$ 243,054,058	\$ 237,072,174
Funding Percentage	80.14%	75.80%	77.93%

				Actuarial				UAAL as a
Year ending	Actuarial Value of ending Assets ne 30 (a)		Actuarial Accrued L Value of Liability		Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	Percentage of Covered Payroll
June 30			(b)		(b-a)	(a/b)	(c)	((b-a)/c)
					(in thousands)			
2021	Ś	2,216,499	Ś	3,280,868	1 064 369	67.6%	\$ 552,317	192.7%
2020	Ŷ	2 054 826	Ŷ	3 095 291	1 040 465	66.4%	551 981	188 5%
2019		1.964.501		2.779.966	815.465	70.7%	527.571	154.6%
2018		1,881,805		2,661,609	779,804	70.7%	521,671	149.5%
2017		1,793,795		2,511,373	717,578	71.4%	504,553	142.2%
2016		1,707,268		2,289,452	582,184	74.6%	471,268	123.5%
2015		1,636,268		2,178,827	542,559	75.1%	462,057	117.4%
2014		1,566,076		2,010,090	444,014	77.9%	437,676	101.4%
2013		1,469,170		1,914,300	445,130	76.8%	416,766	106.8%
2012		1,400,779		1,802,604	401,825	77.7%	385,526	104.2%
2011		1,348,763		1,695,301	346,538	79.6%	398,264	87.0%
2010		1,265,404		1,559,324	293,920	81.2%	393,829	74.6%
2009		1,217,638		1,544,144	326,506	78.9%	404,516	80.7%
2008		1,377,101		1,464,202	87,101	94.1%	404,593	21.5%
2007		1,318,687		1,307,643	(11,044)	100.8%	386,917	-2.9%
2006		1,223,323		1,232,367	9,044	99.3%	369,310	2.4%
2005		1,148,908		1,174,796	25,888	97.8%	349,258	7.4%
2004		1,081,359		1,107,634	26,275	97.6%	336,615	7.8%
2003		1,025,469		1,052,004	26,535	97.5%	319,855	8.3%
2002		990,450		1,017,129	26,679	97.4%	300,994	8.9%
2001		954,821		1,026,993	72,172	93.0%	278,507	25.9%
2000		895,151		967,064	71,913	92.6%	266,519	27.0%
1999		804,970		876,412	71,442	91.8%	238,281	30.0%
1998		733,716		804,501	70,785	91.2%	235,956	30.0%
1997		639,128		753,883	114,755	84.8%	227,000	50.6%



				Actuarial						UAAL as a	
Year ending June 30	Actuarial Value of Assets (a)			Accrued Liability (AAL) (b)		Jnfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)		Covered Payroll (c)	Percentage of Covered Payroll ((b-a)/c)	
					(iı	n thousands)					
2021	Ś	2.191.651	Ś	4.142.015	Ś	1.950.364	52.9%	Ś	657.935	296.4%	
2020	Ŧ	2.035.714	Ŧ	3,969,003	Ŧ	1.933.289	51.3%	Ŧ	645,903,0	299.3%	
2019		1.950.860		3.505.319		1.554.459	55.7%		624.908.0	248.8%	
2018		1.866.121		3.379.554		1.513.433	55.2%		612.899	246.9%	
2017		1,779,592		3,282,045		1,502,453	54.2%		607,355	247.4%	
2016		1,716,296		2,942,024		1,225,728	58.3%		586,397	209.0%	
2015		1,662,346		2,837,375		1,175,029	58.6%		557,708	210.7%	
2014		1,610,286		2,687,049		1,076,764	59.9%		567,074	189.9%	
2013		1,552,924		2,566,834		1,013,910	60.5%		563,623	179.9%	
2012		1,517,410		2,462,913		945,503	61.6%		561,179	168.5%	
2011		1,486,698		2,331,806		845,108	63.8%		547,748	154.3%	
2010		1,410,368		2,122,191		711,823	66.5%		562,150	126.6%	
2009		1,374,079		2,101,838		727,759	65.4%		561,588	129.6%	
2008		1,605,462		1,984,967		379,505	80.9%		535,807	70.8%	
2007		1,541,860		1,816,650		274,790	84.9%		515,573	53.3%	
2006		1,427,393		1,686,502		259,109	84.6%		499,044	51.9%	
2005		1,354,006		1,492,150		138,144	90.7%		468,858	29.5%	
2004		1,284,833		1,424,661		139,828	90.2%		453,517	30.8%	
2003		1,218,001		1,358,822		140,821	89.6%		437,239	32.2%	
2002		1,169,294		1,307,202		137,908	89.5%		418,904	32.9%	
2001		1,116,846		1,254,341		137,495	89.0%		403,258	34.1%	
2000		1,037,466		1,174,087		136,621	88.4%		387,999	35.2%	
1999		931,056		1,065,754		134,698	87.4%		372,299	36.2%	
1998		821.977		955,694		133.717	86.0%		357,899	37.4%	

Reflects different actuarial method that overstated funded ratio 18



A Note to Clarify the Historical Funding of VSTRS

<u>Pre 2006 VSTRS Funding Status Reflects an "Outlier" Method that Overstates</u> <u>the Funded Position</u>

- The actuarial method used in annual valuations prior to 2006 distorted the growth in the unfunded liability.
 - Based on statutory requirements
- The actuarial method used by VSTRS, as required by statute at that time, was "Frozen Initial Liability" or FIL.
- FIL froze the liability and pushed increases to the "normal cost" therefore overstating the funded ratio and understating the unfunded liability.
- Vermont had actually lost considerable ground in the status of pension funding at that time.





VSTRS

Using the accepted Entry Age Normal (EAN) actuarial method, the VSTRS funded ratio declined from 92.3% in 2001 to 81.1% in 2005.

VSTRS Unfunded Liability Using EAN and FIL Methods



Using the EAN method, the VSTRS unfunded liability increased from \$93.8 million in 2001 to \$315.1 million in 2005.

Experience Studies

- "<u>Assumptions are used to estimate a plan's future benefit payments and their present value</u> and do not determine outcomes."
 - Segal Group
- Outcomes are determined by actual member behavior, benefit provisions, actual contributions and investment income.
- Actuarial assumptions do, however, provide a way to project future liabilities and assets for decision-making purposes.
- The reliability of an actuarial valuation depends on the use of reasonable methods and assumptions.
- Experience studies are used to "true up" these assumptions to keep them reasonable in a changing environment.
- Best practices recommend that experience studies be conducted no less frequently than every five years.
- Vermont statute now requires experience studies to be completed every three years.

Actuarial Gains and Losses Key Points

- A Pension Plan Has Actuarial Gains Or Losses Each Year
 - Actual events during the year ("experience") do not exactly match the long-term assumptions previously made.
- Economic Gains/Losses:
 - The actual investment returns, cost of living or inflation were higher or lower than anticipated.
- Experience And Demographic Gains or Losses:
 - Mortality, Salary Increases, Termination, Staff Turnover, Retirement
- An Experience Study Is Completed To Reset Assumptions
- Patterns of gains/losses exist in both VSERS and VSTRS (see next slides)
- While gains and losses are measurers against assumptions it is actual performance (economic and demographic) that drive the liabilities.
- Per Segal: "Assumptions are used to estimate a plan's future benefit payments and their present value and do not determine outcomes."



	20	17	20	2018		2019		2020		2021	
Month	1-month	12- month									
January	0.6	2.5	0.5	1.6	0.3	1.5	0.7	2.3	0.4	1.1	,
February	0.3	2.6	0.4	1.7	0.2	1.3	0.3	2.4	0.4	1.2	
March	-0.1	2.2	0.1	2.0	0.5	1.7	-02	1.7	0.6	2.1	
April	0.3	1.9	0.4	2.1	0.4	1.7	-0.4	0.8	0.7	3.3	
May	0.1	1.7	0.4	2.5	0.3	1.5	0.0	0.6	0.6	3.9	
June	0.0	1.5	0.0	2.6	0.1	1.6	0.3	0.8	1.0	4.6	-
July	-0.2	1.3	0.0	2.7	0.1	1.7	0.4	1.1			
August	0.3	1.6	0.2	2.7	0.1	1.5	0.1	1.1			
September	0.5	1.9	0.1	2.2	0.0	1.4	0.1	1.2			
October	-0.1	1.5	-0.1	2.3	-0.1	1.5	-0.2	1.1			
November	0.0	1.6	-0.4	1.9	0.1	1.9	0.1	1.1			
December	0.1	1.7	-0.1	1.7	-0.1	1.9	0.2	1.4			

Table A. Northeast region CPI-U 1-month and 12-month percent changes, all items index, not seasonally adjusted

VSERS 2021 Valuation Assumption: Assumed to occur at the rate of 2.40% per annum for Groups A, C and D members and 1.35% per annum for Group E and F members (beginning at age 62 for deferred retirements) who retired before July 1, 2008. For Group F members retiring after July 1, 2008, assumed to occur at the rate of 2.4% per annum. The January 1,2021 COLA is assumed to be 1.00% for groups E and F who retired before July 1, 2008 and 0.00% for all other groups.

VSTRS 2021 Valuation Assumption: Assumed to occur on January 1 following one year of retirement at the rate of 2.40% per annum for Group A members and 1.35% per annum for Group C members (beginning at age 62 for Group C members who elect reduced early retirement). The January 1,2021 COLA is assumed to be 0.00% for group A and 1.00% for groups B and C.

Components of Change in the Unfunded Actuarial Liability -			
VSERS			
	Cumulative	Valuation	Cumulative
Category	2011-2020	2021	2011-2021
Beginning FY Unfunded liability	\$293,920,094		\$293,920,094
Changes in Actuarial Assumptions	489,354,525	-	489,354,525
Changes in System Provisions	22,252	-	22,252
Incorporation of Temp Salary Decreases	-	-	-
Change in employee contribution rate	(2,610,261)	-	(2,610,261)
Expected adj. not incl. assumption/benefit changes	(79,843,570)	12,683,164	(67,160,406)
Other expense gain/loss	9,482,240	-	9,482,240
Salary experience gain/loss	95,627,506	4,448,937	100,076,443
COLA experience gain/loss	(110,469,758)	35,588,639	(74,881,119)
Net Turnover (new members, terminations)	61,630,140	(3,446,914)	58,183,226
Investment gain/Loss	56,205,931	(52,180,733)	4,025,198
Mortality gain/loss	40,657,045	4,440,365	45,097,410
Retirements gain/loss	97,520,027	19,015,951	116,535,978
Disability experience gain/loss	2,357,312	158,352	2,515,664
Other gain/loss	86,611,636	3,195,319	89,806,955
Ending FY Unfunded Liability	\$1,040,465,119		\$1,064,368,199

Components of Change in the Unfunded Actuarial Liability -			
VSTRS			
	Cumulative	Valuation	Cumulative
Category	2011-2020	2021	2011-2020
5 7			
Beginning FY Unfunded liability	\$711,823,061		711,823,061
Changes in Actuarial Assumptions	783,238,313	-	783,238,313
Changes in System Provisions	-	-	-
Incorporation of Temp Salary Decreases	-	-	-
Change in employee contribution rate	-	-	-
Expected adj. not incl. assumption/benefit changes	(5,786,660)	29,161,309	23,374,649
Other expense gain/loss	(663,448)	6,407,934	5,744,486
Salary experience gain/loss	(125,779,835)	(9,493,027)	(135,272,862)
COLA experience gain/loss	(88,185,397)	22,593,555	(65,591,842)
Net Turnover (new members, terminations)	319,901,420	10,518,767	330,420,187
Investment gain/Loss	52,038,767	(57,785,688)	(5,746,921)
Mortality gain/loss	20,000,804	(1,761,346)	18,239,458
Retirements gain/loss	162,532,393	16,872,089	179,404,482
Disability experience gain/loss	2,670,773	560,942	3,231,715
Other gain/loss			-
Contribution Shortfall incl. Health Care Appropriation	101,499,179	-	101,499,179
Ending FY Unfunded Liability	\$1,933,289,370		\$1,950,363,905

Note: From 2011 through 2021 investments, combined for both VSERS and VSTRS, are a net gain, slightly exceeding the assumed rate of return.

Significant Gains and Losses

- Workforce related losses are a primary driver of actuarial losses excluding the impact of the Great Recession and assumption changes.
- VSERS:
 - Salaries vs. Assumptions
 - Workforce Turnover and Retirement Experience
 - Retirement Incentive Program 2010 and 2016
- VSTRS:
 - Significant increase in teacher retirement and turnover from 2011 and through 2020 Total of \$509.8 million or 41.16% (up from 39.50% in 2020) of the total increase in unfunded labilities.
 - Underfunding of Health Care (paid out of pension fund): From 2011 to 2021: \$101,499,179 or 8.20%
 - Combined: Almost half or 49.4% (up from 47.8% in FY2020) of the increase in liabilities

VSTRS Turnover and Retirements - Retirement Incentive

- In 2017, a VTNEA communication to Treasurer's Office identified schools with some kind of retirement incentive:
 - Provided very rough estimate of slightly less than 50% of schools
 - No data on current levels
 - Data on actual take-up of provisions is anecdotal
 - some ad hoc
 - others contractual
- Some include requirement that the teacher apply for retirement.
- Factors:
 - Needs of the schools
 - Longevity
- Most schools limit the number of incentives offered and/or require advance notice.
- Need to reconcile with turnover/retirement gains and losses. How are these decisions impacting the funded position of the plan?

How are we doing?

- Measured by an Independent Actuary through an annual valuation.
- Three Important Factors:
 - Pension Status
 - Pension Liabilities
 - Assets Available to meet these liabilities
 - Unfunded Liabilities
 - Is Employer contributing to plan at the recommended rate?
 - Actuarially Determined Employer Contribution (ADC/ADEC)
 - Is plan in place to retire the unfunded liability?
 - Is it doable?

Reviewed in the next section

How Do You Pay Down the Liability? The ADEC

- Sources of Revenue to the Fund
 - Employee Contributions
 - Employer Contributions
 - Investments

Contributions + Investment Income = Benefits + Expenses

- Actuarially Determined Employer Contribution (ADEC) must be appropriated
 - A measure of needed plan funding
 - The actuarially determined pension fund contribution in a single year
- The ADEC has two parts:
 - The Normal Cost
 - The normal cost generally represents the portion of the cost of projected benefits allocated to the current plan year
 - Cost of the annual benefit accrual as a level percent of salary
 - The employer normal cost equals the total normal cost of the plan reduced by employee contributions
 - Amortization
 - The annual amount needed to eliminate the unfunded liability over the plan's amortization period
 - Legislature Appropriates Funds, Sets Funding Policy
 - Amortization of ADEC with plan to retire unfunded liability by 2038
 - But ADEC is increasing, resulting in more strain on budgets

Recent History of Funding the ADEC is Excellent

STATE OF VERMONT REQUIRED SUPPLEMENTARY INFORMATION DEFINED BENEFIT PENSION PLANS SCHEDULE OF EMPLOYER AND NONEMPLOYER CONTRIBUTIONS LAST EIGHT YEARS (Dollar amounts expressed in thousands)

(Unaudited)

Retirement System	Year Ended 6/30	A De Cor	ctuarially etermined htribution ⁽¹⁾ (ADC)	Con in	tributions Relation to ADC	Cor (I De	ntribution Excess) eficiency	Covered Payroll (CP)	Contribution as a Percent of CP
Vermont State	2021	\$	83,877	\$	88,944	\$	(5,067)	\$ 551,981	16.11%
Retirement System	2020		78,944		84,430		(5,486)	527,571	16.00%
-	2019		62,985		66,618		(3,633)	521,671	12.77%
	2018		52,065		64,564		(12,499)	504,553	12.80%
	2017		48,503		60,280		(11,777)	471,268	12.79%
	2016		46,238		54,347		(8,109)	462,057	11.76%
	2015		44,652		55,881		(11,229)	437,676	12.77%
	2014		42,786		56,483		(13,697)	416,766	13.55%
State Teachers'	2021	\$	132,142	s	134,541	s	(2,399)	\$ 645,903	20.83%
Retirement System ⁽²⁾	2020		126,197		126,942		(745)	624,908	20.31%
-	2019		105,641		119,175		(13,534)	612,899	19.44%
	2018		88,409		114,599		(26, 190)	607.355	18.87%
	2017		82,660		82,887		(227)	586,397	14.13%
	2016		76,103		76,948		(845)	557,708	13.80%
	2015		72,858		72,909		(51)	567,074	12.86%
	2014		68.353		72.668		(4.315)	563,623	12.89%

Note: the 2014 VSERS ADC/ADEC varies slightly from the valuation report based on differences in the application of administrative expenses. Not a material variance.

Source: State of Vermont Annual Comprehensive Financial Report, 2021

But... VSTRS Contribution History Prior to 2007 was Characterized by Significant Underfunding

Year	Recommended Contribution For Budget Based on Actuarial Projection	Actual Contribution	\$ Difference: Act vs. Rec.*	Percentage of Request	Year	Recommended Contribution For Budget Based on Actuarial Projection	Actual Contribution	\$ Difference: Act vs. Rec.*	Percentage of Request
	jj								
4070	7 000 005	4 005 455	0.004.070	04.0404	1998	33,519,949	18,106,581	15,413,368	54.02%
1979	7,806,825	4,825,155	2,981,670	61.81%	1999	27,232,542	18,080,000	9,152,542	66.39%
1980	8,944,090	8,471,960	472,130	94.72%	2000	23,573,184	18,586,240	4,986,944	78.84%
1981	9,862,861	8,830,900	1,031,961	89.54%	2001	20,882,521	19,143,827	1,738,694	91.67%
1982	10.200.209	7.822.760	2.377.449	76.69%	2002	21,965,322	20,446,282	1,519,040	93.08%
1983	10 721 814	10 929 355	(207 541)	101 94%	2003	23,197,088	20,446,282	2,750,806	88.14%
4004	10,721,014	10,525,000	(207,041)	00.000/	2004	29,608,892	24,446,282	5,162,610	82.56%
1984	12,341,069	11,592,100	748,969	93.93%	2005	43,592,332	24,446,282	19,146,050	56.08%
1985	13,475,181	12,567,866	907,315	93.27%	2006	49,923,599	24,985,506	24,938,093	50.05%
1986	14,668,095	14,461,148	206,947	98.59%	2007	38,200,000	38,496,410	(296,410)	100.78%
1987	15.925.452	16.239.416	(313.964)	101.97%	2008	40,749,097	40,955,566	(206,469)	100.51%
1988	16 294 346	17 186 259	(891 913)	105 47%	2009	37,077,030	37,349,010	(272,700)	100.74%
1000	10,234,340	10,100,200	(007,010)	105.4770	2010	41,505,002	41,920,003	(417,001)	101.01%
1989	18,072,172	19,000,000	(927,828)	105.13%	2011	40,233,000	50,200,131	(2,035,125)	104.22%
1990	21,320,155	19,561,000	1,759,155	91.75%	2012	51,241,952	50,152,011	(4,910,079)	109.56%
1991	25,013,437	15,000,000	10,013,437	59.97%	2013	68 352 825	72 668 412	(4,303,303)	106.13%
1992	28,595,220	14,618,992	13,976,228	51.12%	2014	72 857 863	72,000,412	(4,313,307)	100.31%
1003	28 810 875	10 800 0/8	8 020 827	60.02%	2015	76, 102, 909	76,947,869	(844 960)	100.07 %
4004	20,015,075	19,090,040	5,025,027	70.7 E0/	2010	82 659 576	82 887 174	(227,598)	100.28%
1994	25,805,408	20,380,000	5,225,408	79.75%	2018	88 409 437	114 598 921	(26 189 484)	129.62%
1995	27,451,926	18,080,000	9,371,926	65.86%	2019	105 640 777	119 174 913	(13 534 136)	112 81%
1996	29,884,559	11,480,000	18,404,559	38.41%	2020	126,197.389	126.941.582	(744,193)	100.59%
1997	30,954,237	18,080,000	12,874,237	58.41%	2021	132,141,701	134,541,278	(2,399,577)	101.82%

*Beginning 1996, budget contribution amount per prior valuation report

The impact of underfunding the VSTRS System

- Underfunding of the State Teachers' ADEC (Actuarially Determined Employer Contribution) was not a factor in the increase in the unfunded liability from FY 2019 to FY2020 and then to FY2021 and the ADEC for FY2022.
- Underfunding did, however, result in lower funding levels coming into the Great Recession and continues to be a factor in the ADEC contribution.
- While the pension ADEC underfunding was resolved in 2007, underfunding continued due to health care expenditures paid from the pension fund without sufficient appropriation.

At at least \$353 million of today's unfunded liability exists because of past shortfalls in the employer contributions and that today's employer contribution is now \$28 million higher than it would be if the ADEC was appropriately funded in prior years. It is also reasonable to assume that without the underfunding, the funded status of the plan would approximate 60.2% instead of the 2020 level of 51.3%.

Year	1979	1980		2019	2020
Rate of return assumption	6.50%	6.50%		7.50%	7.00%
Rate of Increase in amortization payment	0.05	0.05		0.03	0.03
Amortization period	22	21		19	18
Contribution shortfall	2,981,670	472,130		13,534,136)	(744,193)
Prior year shortfall still remaining (zero in 1979 start year)	-	3,008,634	Repeat Each Year 3	73,181,173	357,525,091
Total	2,981,670	3,480,764	3	59,647,037	356,780,898
Amortization	161,673	196,396		28,062,166	27,798,116
Balance (Total *Rate of return assumption - amortization adjusted					
for interest)	3,008,634	3,504,335	3	57,525,091	353,000,966

Notes to chart:

- Over this 42 year period, the interest rate has ranged from a low of 6.5% at the beginning of the period, to a high of 8.5% for a number of years, to 7% as of June 30, 2020.
- The amortization period for the unfunded liability has been extended three times, most recently as of June 30, 2006.
- The amortization payments were calculated to increase at the rate of 5% per year prior to June 30, 2019 and at the rate of 3% per year beginning June 30, 2019

How are we doing?

- Measured by an Independent Actuary through an annual valuation.
- Three Important Factors:
 - Pension Status
 - Pension Liabilities
 - Assets Available to meet these liabilities
 - Unfunded Liabilities
 - Is Employer contributing to plan at the recommended rate?
 - Actuarially Determined Employer Contribution (ADC/ADEC)
 - Is plan in place to retire the unfunded liability?
 - Is it doable?

Reviewed in the next section

VSERS - Sco	pe of the Cha	llenge (Dollar	s in Millior	ıs)
		Estimated	2020	Add 2021
	2019	Results based	Valuation	Valuation**
	Valuation*	on Experience	** 2022	* 2023
	2021 budget	Study	budget	budget
Unfunded Liability	\$815.5	\$1,032.3	\$1 <i>,</i> 040.5	\$1,064.4
change		\$216.8	\$225.0	\$248.9
ADEC	\$83.9	\$113.6	\$119.9	\$125.9
change		\$29.7	\$36.0	\$42.0
* Used to develop FY202	21 budget			
** Impacts the FY2022 k	oudget			
***Impacts the FY2023	budget			
Variances due to roundi	ng			

VSTRS - Scope of t	he Challe	nge (Dolla	rs in Million	s)
	2019	Estimated	2020	Add 2021
Unfunded Liability change	\$1,554.0	\$1,880.0 \$326.0	\$1,933.3 \$379.3	\$1,950.4 \$396.4
ADEC change	\$135.6	\$186.4 \$50.8	\$196.2 \$60.6	\$205.2 \$70.4
 * Used to develop FY2021 budget ** Impacts the FY2022 budget ***Impacts the FY2023 budget Variances due to rounding 				

Next Steps are with the General Assembly

Act 75 created the Pension Benefits, Design, and Funding Task Force to review and report on the benefits, design, and funding of retirement and retiree health benefit plans for the Vermont State Employees' Retirement System and the State Teachers' Retirement System.

The Task Force will make recommendations about benefit provisions and appropriate funding sources along with other recommendations it deems appropriate for consideration, consistent with actuarial and governmental accounting standards, as well as demographic and workforce trends and the longterm sustainability of the benefit programs.

The act also creates the Joint Public Pension Oversight Committee to work with, and provide assistance to, other legislative committees on matters relating to retirement and other postemployment benefits.

Other Post Employment Benefits (OPEB)

What is OPEB?

- Other Post Employment Benefits (OPEB) are benefits that employers provide to their retirees, <u>other than</u> <u>pension benefits</u>. They are usually composed of retiree health care benefits but can also include life insurance and other services.
 - Does not include pension plans or compensated absences

Who is covered through OPEB plans?

• <u>VSTRS (RTHMB) and VSERS</u> - Active employees eligible to receive those future benefits, terminated employees who have accumulated the benefits but are not yet receiving them, and retired employees (or their beneficiaries) currently receiving benefits.

How do we pay for it?

- <u>Pay-As-You Go</u>: No assets set aside. Instead benefits/premiums are paid by as they come due for payment. Generally paid out of current revenues.
- <u>Pre-funding</u>: Setting aside funds to pay for future benefits to employees. These assets are invested and the proceeds are used to pay benefits in the future.

While we have some accumulated assets for the OPEBs, we currently only Fund the Pay-Go.

Prefunding is simply committing to pay more than Pay-Go so that investment earnings can fund future benefits.

Advantages of prefunding OPEBs

- Invest Assets in the trust can be invested and diversified for a potentially greater rate of return
- <u>Reduce Liabilities</u> Actuaries can use a higher discount rate for prefunded assets when calculating the OPEB liability
- Improve Credit Actively addressing future obligations can be a positive factor with Rating Agencies and credit ratings
- <u>Reduce Risk</u> Prefunding can help hedge against health care inflation, longer life expectancies for retirees and the "baby boom" retirement surge
- <u>Plan for the Future</u> Prefunding now means that future taxpayers/employees will not bear a disproportionate burden of the costs
- <u>Preserve Funding</u> Funds put into an OPEB Trust are dedicated for future OPEB costs and protected from diversion for other uses
- <u>Strong Fiscal Management</u> Prefunding is a fiscally prudent measure that is considered a "best practice" by Government Finance Officers Association

Adapted from https://www.pars.org/2019/04/top-10-reasons-to-prefund-your-other-post-employment-benefits-2/

OPEB Funding Status of VSERS and VSTRS as of June 30, 2021

	Financial Data	2019	2020	2021	Cumulative Change FY19-FY21
VSERS OPEB	Total OPEB Liability	1,279,298,804	1,482,970,357	1,593,341,095	314,042,291
	Less: Plan Assets	51,732,747	57,592,708	120,267,813	68,535,066
	Net OPEB Liability	1,227,566,057	1,425,377,649	1,473,073,282	245,507,225
	Plan Net Position as a Percentage of				
	Total OPEB Liability	4.04%	3.88%	7.55%	
VSTRS OPEB	Total OPEB Liability	1,041,064,931	1,268,119,008	1,290,220,534	249,155,603
	Less: Plan Assets	312,090	8,718,699	14,633,492	14,321,402
	Net OPEB Liability	1,040,752,841	1,259,400,309	1,275,587,042	234,834,201
	Plan Net Position as a Percentage of				
	Total OPEB Liability	0.03%	0.69%	1.13%	
Tatal		2 220 262 725	2 751 000 205	2 002 564 620	FC2 407 004
Total		2,320,363,735	2,751,089,365	2,883,561,629	563,197,894
	Less: Plan Assets	52,044,837	66,311,407	134,901,305	82,856,468
	Net OPEB Liability	2,268,318,898	2,684,777,958	2,748,660,324	480,341,426
	Plan Net Position as a Percentage of				
	Total OPEB Liability	2.24%	2.41%	4.68%	

VSERS OPEB Unfunded Liability

- The VSERS OPEB unfunded liability (after application of all existing assets) as of June 2021 is \$1,473,073,282.
- That is an increase of \$47,695,633 from the prior valuation.
- We will continue to see a pattern of increases if we continue to use Pay-go practices.
- The projected FY2023 UAAL is \$1,664,236,504. If we were to prefund, the UAAL is estimated at \$772,943,961.
- That is a decrease in liabilities of \$891,292,543.

VSERS OPEB Prefunding Request

Based on current policy of non-funding of the ADEC, the actuary determined a funding need of \$122,114,722 for FY2023, inclusive of \$42,336,204 in General Fund appropriation request toward Pay-go funding.

If the State were to adopt a pre-funding policy, the ADEC would decrease substantially, to \$64,577,985.

The estimated 40% allocation to the General Fund is \$25,831,194.

The "lift" to get to prefunding for the VSERS OPEB is \$22.2 million; the impact on the General Fund is \$8.9 million.

VSTRS OPEB Unfunded Liability

- The VSTRS OPEB unfunded liability (after application of all existing assets) as of June 2021 is \$1,275,587,042.
- That is an increase of \$16,186,733 from the prior valuation.
- Despite beneficial contractual changes and positive claims experience, the fund will continue to see a pattern of increases if we continue to use pay-go practices.
- The projected FY2023 UAAL is \$1,504,546,662. If we were to prefund, the UAAL is estimated at \$667,756,829.
- That is a decrease in liabilities of \$836,789,833.

VSTRS OPEB Prefunding Request

The Treasurer's Office is submitting two proposals:

- 1) a "graduated funding scale" which, according to our actuaries, would meet the requirements necessary for prefunding
 - This approach would require a policy for a graduated funding scale to fund the liability gap over time.
 - It builds up to the actuarially determined contribution, in incremental prefunding contribution (IPC) based on a funding schedule established in statute.
 - The objectives would be to meet requirements to be recognized as prefunding and attain full funding no later than the current amortization period, end of FY2049.

2) a proposal recommended by Senate Appropriations in the 2021 legislative session:

- The amount determined necessary to pay all retiree health and medical benefits, including prescription drug benefits (essentially pay-go) will be paid for out of the General Fund.
- The amount determined in the most recent actuarial valuation to be the "normal cost", \$15,104,597 will be appropriated from the Education Fund.
- According to our actuaries, this alternative also meets the requirements for prefunding.

Investments

Managed by The Vermont Pension Investment Commission (VPIC)

Key Points

- Investments are a Significant Contribution to the Pension Fund
 - Roughly 60 to 62% of each dollar paid to Retirees is From Investment Income
- Investments are Volatile- Subject to market Conditions
 - Long-Term View
- Investment Performance has met the assumed rate of return
 - FY2021 return: 24.62% (Highest return percentage since the 1980s)
 - Combined interest earnings (state, teachers and municipal plan) of over \$1.14 billion
- Good News, But....
 - Investments alone can not solve the unfunded liability!
- Investment results are "smoothed", theoretically so as to avoid peaks and valleys in appropriations (ADEC). Stabilizes contribution levels.
- VPIC's assumed rate of return is in line with other public pension funds.
- VPIC sets the smoothing period--5 years is in line with other states.



Source: VPIC, historical valuation reports

Vermont's Return Assumption In Line With National Average



6.9%

6.5-6.75

6.75-7

7-7.25

7.25-7.5

7.5-7.75

10.0%

5.0%

0.0%

0.8%

5.25-5.5

0.8%

6.25-6.5

Rate of Return as Reported to NASRA May 2021

Rate (%)	Percentage	Count		
5.25-5.5	0.8%	1		
6.25-6.5	0.8%	1		
6.5-6.75	6.9%	9		
6.75-7	13.7%	18		
7-7.25	31.3%	41		
7.25-7.5	22.1%	29		
7.5-7.75	21.4%	28		
7.75-8	3.1%	4		
Total	100.0%	131		
Average 7.12				
Avelage	7.15			
Median	7.00			
Source: NASRA May Data				

3.1%

7.75-8

1	Actuarial value of assets, June 30, 2020		\$2,054,825,853
2	Net new money*, including expected investment income (7.00%)		109,492,892
3	Preliminary asset value: 1 + 2		2,164,318,745
4	Smoothing adjustment		
	a) Market value, June 30, 2021	\$2,425,222,408	
	b) Preliminary asset value	2,164,318,745	
	c) Unrecognized appreciation	260,903,663	
	d) Adjustment	X 20%	52,180,733
5	Actuarial value of assets, June 30, 2021: 3 + 4d		\$2,216,499,478
6	Actuarial value of assets as a percentage of market value: 1 / 5		91.39%

Determination of Actuarial	Value of Assets for	Year Ended June 30, 2021
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1	Actuarial value of assets, June 30, 2020		\$2,035,713,611
2	Net new money*, including expected investment income (7.00%)		VSTRS 98,151,456
3	Preliminary asset value: 1 + 2		2,133,865,067
4	Smoothing adjustment		
	(a) Market value, June 30, 2021	\$2,422,793,508	
	(b) Preliminary asset value	2,133,865,067	
	(c) Unrecognized appreciation	288,928,441	
	(d) Adjustment	X 20%	57,785,688
5 Actuarial value of assets, June 30, 2021: 3 + 4d			\$2,191,650,755
6	Actuarial value of assets as a percentage of market value: 5 / 4(a)		90.46%